



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2012-0071; Directorate Identifier 2012-NE-05-AD; Amendment 39-17191; AD 2012-18-14]**

**RIN 2120-AA64**

**Airworthiness Directives; Pratt & Whitney Canada, Auxiliary Power Units**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain serial numbers of Pratt & Whitney Canada (P&WC) PW901A auxiliary power units (APUs) approved under Technical Standard Order TSO-C77A and installed on, but not limited to, Boeing 747-400 series airplanes. This AD requires modifications of the rear gas generator case, exhaust duct support, and turbine exhaust duct flanges. This AD was prompted by several events of high-pressure turbine blade fracture leading to separation of the rear gas generator case and release of high energy debris. We are issuing this AD to prevent separation of the rear gas generator case and release of high energy debris, which could result in injury and damage to the airplane.

**DATES:** This AD becomes effective [Insert date 35 days after date of publication in the FEDERAL REGISTER]. The Director of the Federal Register approved the incorporation

by reference of certain publications listed in this AD as of [Insert date 35 days after date of publication in the FEDERAL REGISTER].

**ADDRESSES:** The Docket Operations office is located at Docket Management Facility, U.S. Department of Transportation, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12-140, Washington, DC 20590-0001.

**FOR FURTHER INFORMATION CONTACT:** Mazdak Hobbi, Aerospace Engineer, New York Aircraft Certification Office, FAA, Engine & Propeller Directorate, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: 516-228-7330; fax: 516-794-5531; e-mail: mazdak.hobbi@faa.gov.

#### **SUPPLEMENTARY INFORMATION:**

##### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. That NPRM was published in the *Federal Register* on February 27, 2012 (77 FR 11421). That NPRM proposed to correct an unsafe condition for the specified products. Transport Canada, which is the aviation authority for Canada, has issued AD CF-2011-40, dated October 26, 2011 (referred to after this as “the MCAI”), to correct an unsafe condition for the specified products. The MCAI states:

The PW901A Auxiliary Power Units have experienced several events of High Pressure Turbine (HPT) blade fracture, some of which have resulted in the separation of the rear gas generator case, exhaust duct support, the turbine exhaust duct flanges and the release of high energy debris. Subsequent investigation revealed the turbine exhaust duct can separate under excessive load conditions resulting from extreme engine distress such as HPT blade fractures.

You may obtain further information by examining the MCAI in the AD docket.

### **Comments**

We gave the public the opportunity to participate in developing this AD. We considered the comments received. The following presents the comments received on the proposal and the FAA's response to each comment.

### **Support for the NPRM**

The Boeing Company indicated it supported the content of the proposed rule.

### **Request to Increase Compliance Time**

Several commenters believed the compliance time in the AD should be extended. Atlas Air requested that the compliance time be increased from 42 to 60 months. Atlas Air noted that the 42-month requirement would force them to remove APUs prior to their 8,000 hours soft time threshold which is based on their budget and operating experience and reliability. This threshold would increase the maintenance burden and cost to Atlas Air.

KLM Royal Dutch Airlines (KLM) also requested that the compliance date be extended. KLM indicated that requiring all the affected APUs be modified in 42 months would require forced unscheduled replacements.

United Airlines (UAL) also requested that the compliance time be extended from 42 to 48 months. United indicated that the 42-month compliance time would require engines to be removed prematurely and cause capacity problems for repair shops.

We do not agree. We have no data that justifies extending the compliance time to 48 months. Operators who want to a longer compliance interval may request an AMOC using the procedures in 14 CFR part 39. Operators contemplating an AMOC request are

reminded that they must show that their extension will provide the same level of safety as provided by the 42 month compliance interval.

#### **Request to Increase Compliance Time for Those APUs Incorporating Previous SB**

KLM also requested a longer compliance period for APU's modified per SB 3910001-49-16250. KLM commented that the risk for these blades is lower than the pre-SB blades. United Parcel Service Company also requested that the compliance period be increased from 42 to 60 months for APUs having SB-16250 previously incorporated (improved HPT blades).

We do not agree. We have no data supporting the conclusion that APUs modified per SB 3910001-49-16250 have a lower risk of separation of the rear gas generator case or that an increased compliance time is justified for these blades. We did not change the AD based on this comment.

#### **Question on Compliance Date**

KLM asked what the compliance date for this AD would be, since the compliance date in AD CF-2011-40, dated October 26, 2011, is different from the date in Pratt & Whitney Canada Service Bulletin (SB) 3910001-49-16255, Revision No. 2, dated March 1, 2011.

The compliance date for this AD will be 35 days after the date the AD is published in the Federal Register. We did not change the AD based on this comment.

#### **Comment on Failure to Address Root Cause**

KLM indicated that accomplishing SB 391001-49-16255, Revision No. 2, dated March 1, 2011, and our AD and will not prevent high pressure turbine blades from failing.

We do not agree. The root cause of the failure of the HPT blades is excessive load resulting from extreme engine distress, which leads to turbine exhaust duct separation. Accomplishing SB 391001-49-A16255, Revision No. 2, dated March 1, 2011, will mitigate excessive load by modifying the rear gas generator case, exhaust duct support and the turbine exhaust duct flanges. We did not change the AD based on this comment.

**Comment on Increased Man-hours Needed to Accomplish the AD**

KLM noted that not all APUs can be modified during an overhaul. Therefore, extra man hours will be required to perform this modification.

We do not agree. The man hours indicated in the SB and in this AD are sufficient to modify the APU. The number of hours required to perform an engine overhaul is not the subject of this AD. We did not change the AD based on this comment.

**Request to Clarify “Preventative Maintenance” in Compliance Statement**

Southern Air indicated that compliance paragraph (e)(1) is misleading wherein it states “within 42 months after effective date of the AD or the first time any maintenance is done other than preventative maintenance, whichever occurs first...” Southern Air believes the statement should read: “42 months after the effective date of the AD or when maintenance which requires unmating of the flanges, or overhaul, whichever occurs first.”

UAL indicated the term “preventative maintenance” in paragraph (e)(1) is vague and ambiguous. UAL noted that as currently stated the AD would have to be accomplished if one was replacing a line replaceable unit like an exciter or starter. UAL suggested that the maintenance be accomplished when the exhaust support duct is accessible, i.e., removed from the APU.

We agree. We changed paragraph (e)(1) of the AD to read “Within 42 months after the effective date of this AD or the first time the APU or module is at a maintenance facility that can perform the modifications, regardless of the maintenance action or reason for APU removal, whichever occurs first, modify the rear gas generator case, exhaust duct support, and turbine exhaust duct flanges.”

#### **Request Not to Mandate Use of Service Bulletin in Compliance Section**

UAL commented that several steps in the accomplishment instructions in P&WC SB No. 3910001-49-A16255, Revision No. 2, do not offer an increase in safety and should not be mandated by the AD. UAL noted that the component maintenance manual offers sufficient instructions to perform the required modifications.

We do not agree. UAL did not identify any unnecessary steps, we know of none, and our inquiry of the OEM did not identify any unnecessary steps. If the OEM determined that the component maintenance manual was adequate, it would have been referenced in SB No. 3910001-49-A16255, Revision No. 2. We did not change the AD based on this comment.

#### **Questions on APU Continuing to Meet Type Certification Requirements**

KLM asked that since the APU was originally certified to a TSO should the certification basis be maintained during the lifetime of operation.

We reply to KLM’s multi-layered comment as follows. First, we granted TSO approval to PWC for this APU on September 20, 1988. Second, the corrective actions required by this AD should return the product to the level of safety intended by its certification basis. Finally, whether or not an OEM covers the cost of actions mandated by our AD actions is between the OEM and the product owner/operator.

## **Conclusion**

We reviewed the available data, including the comments received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We determined that these changes will not increase the economic burden on any operator or increase the scope of the AD.

## **Costs of Compliance**

Based on the service information, we estimate that this AD affects about 135 APUs installed on airplanes of U.S. registry. The average labor rate is \$85 per work-hour. Required parts cost about \$39,899 per APU. Based on these figures, we estimate the cost of the AD on U.S. operators to be \$5,386,365.

## **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

## **Regulatory Findings**

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this AD:

1. Is not a “significant regulatory action” under Executive Order 12866;
2. Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and
3. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (phone: (800) 647-5527) is provided in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.



## **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new AD:

2012-18-14 **Pratt & Whitney Canada:** Amendment 39-17191; Docket No. FAA-2012-0071; Directorate Identifier 2012-NE-05-AD.

#### **(a) Effective Date**

This airworthiness directive (AD) becomes effective [Insert date 35 days after date of publication in the FEDERAL REGISTER].

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to Pratt & Whitney Canada (P&WC) PW901A auxiliary power units (APUs) approved under Technical Standard Order TSO-C77A and installed on, but not limited to, Boeing 747-400 series airplanes. The affected APU serial numbers are PCE 900001 through PCE 900776 inclusive.

#### **(d) Reason**

This AD was prompted by several events of high-pressure turbine blade fracture leading to separation of the rear gas generator case and release of high energy debris. We

are issuing this AD to prevent separation of the rear gas generator case and release of high energy debris, which could result in injury and damage to the airplane.

**(e) Actions and Compliance**

Unless already done, do the following actions.

(1) Within 42 months after the effective date of this AD or the first time the APU or module is at a maintenance facility that can perform the modifications, regardless of the maintenance action or reason for APU removal, whichever occurs first, modify the rear gas generator case, exhaust duct support, and turbine exhaust duct flanges.

(2) Use paragraphs 3.A. through 3.B(3)(f) of Accomplishment Instructions, and paragraph 4.A. of Appendix, of P&WC Alert Service Bulletin (SB) No. 39100001-49-A16255, Revision No. 2, dated March 1, 2011, to do the modifications.

**(f) Credit for Previous Action**

APUs modified before the effective date of this AD using P&WC Alert SB No. A16255R1, dated September 12, 2008, or P&WC Alert SB No. A16255, dated December 12, 2007, meet the modification requirements of this AD.

**(g) Alternative Methods of Compliance (AMOCs)**

The Manager, New York Aircraft Certification Office, FAA, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

**(h) Related Information**

(1) For more information about this AD, contact Mazdak Hobbi, Aerospace Engineer, New York Aircraft Certification Office, FAA, Engine & Propeller Directorate, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: 516-228-7330; fax: 516-794-5531; e-mail: mazdak.hobbi@faa.gov.

(2) Refer to Transport Canada AD CF-2011-40, dated October 26, 2011, and P&WC SB No. A16255R2, dated March 1, 2011, for related information.

**(i) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the following service information under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use the following service information to do the actions required by this AD, unless the AD specifies otherwise:

(i) Pratt & Whitney Canada Alert Service Bulletin No. 3910001-49 A16255, Revision No. 2, dated March 1, 2011.

(ii) Reserved.

(3) For service information identified in this AD, contact Pratt & Whitney Canada Corp., 1000 Marie-Victorin, Longueuil, Quebec, Canada J4G 1A1; phone: 450-677-9411.

(4) You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

(5) You may view this service information at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on August 27, 2012.

Colleen M. D'Alessandro,  
Assistant Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.

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